NOTES ON THE CRAB FISHERY OF THE CHILKA LAKE

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(With five text figures)

INTRODUCTION

Crabs, with an estimated annual production of over 40,000 lbs. form a minor fishery of some importance in certain parts of Chilka Lake (Fig. 1). Hardly 2/5th of the output is exported by rail while the rest is either consumed locally or finds regular demand from the travelling public at railway stations bordering the lake. There is no part of the lake where crabs do not occur, but the production from the northern sector despite its vastness is quite insignificant. Further, all the marketable catches come from the southern and central sectors, i.e., from Rambha in the south to Gangadharpur in the north.

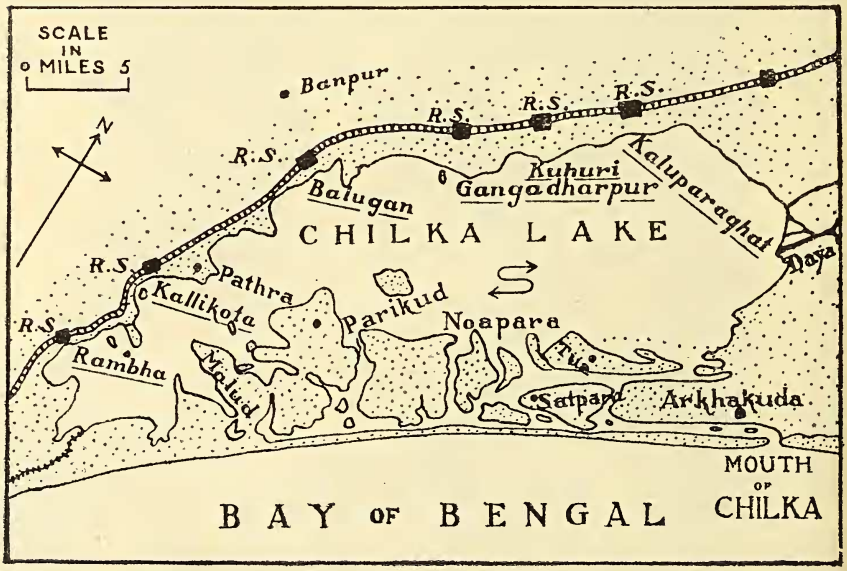

Fig. 1—Map of the Chilka Lake showing important crab fishing grounds, fishermen's villages and consuming and exporting centres. Fishery centres having the same names as the neighbouring railway stations are underlined.

Crabs are caught in the lake almost throughout the year but the peak period extends from the middle of August to October. Crab fishing is mainly done by three groups of fishermen, viz., the Koibartas,

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Tiors and Kondras of Pathra, Banpur and Rambha villages respectively. As mentioned by Chopra (1939), we find that all the age-old customs and traditional methods are practised in the Chilka also. Thus the Tiors and the Kondras who are considered to belong to the lower strata of the fishing community are held unworthy to operate nets and fish with traps only as laid down by tradition. The Koibartas on the other hand who are considered to belong to a higher stratum, fish with nets only, the use of traps being considered below their dignity. They catch crabs also by means of a net known as *Noli-jal*. Thus, so far as the Tiors and the Kondras are concerned the crab fishery, though minor, provides an additional means of livelihood for a period of about 5 months from August/September to January, after the main prawn fishing season is over.

Crabs of Economic Importance

There are several species of crabs present in the lake, but the most important from the fishery point of view are *Scylla serrata* (Forskâl) and to some extent *Neptunus pelagicus* (Linnaeus). Any other kind of crab caught during the course of fishing operations, is regarded unsuitable for marketing and is generally reserved by the fishermen for their own use. Apart from the above two species, which alone are of commercial importance, the more common among the other varieties are *Varuna litterata* (Fabricius) and *Ocypoda* sp. in the saline parts of the lake and *Paratelphusa* sp. in the inundated parts, especially in the northern sector[1].

Scylla serrata (Forskâl), (Fig. 2).—This food crab has a fairly wide distribution in the Indo-Pacific region and is essentially a salt

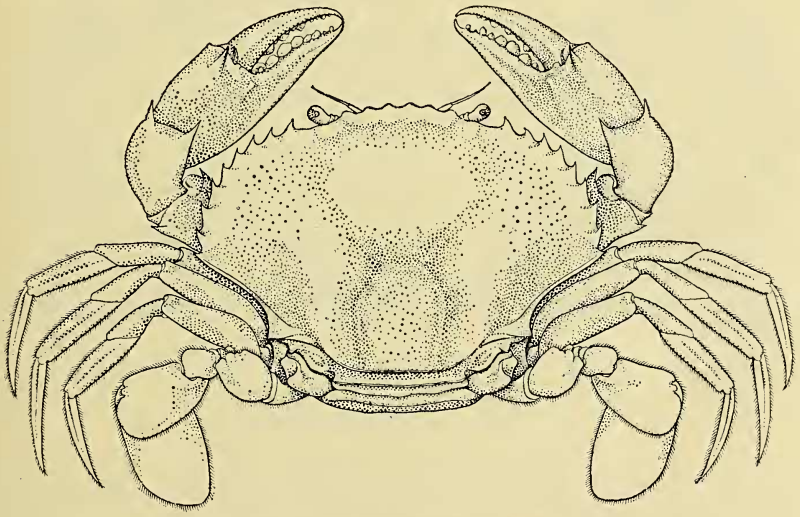

Fig. 2—*Scylla serrata* (Forskâl).

[1] See Kemp, S. (1915). Fauna of the Chilka Lake, Crustacea Decapoda :— *Mem. Indian Mus.*, **5** (5) for a complete list of the crabs of the Chilka Lake.

water species though often found just above the tidal limits (Hora, 1935). It is most important amongst the crabs of the Chilka Lake and is in greater supply than all the other varieties put together. This is the largest of the estuarine crabs and specimens with a carapace 5-6 inches broad as mentioned by Chopra (1939) are very common while those of about 8 inches breadth are not rare. Specimens wih a carapace breadth of 15 to 18 inches as reported by Dr. Ramaswamy Naidu from the Chilka (Chopra *op. cit.* and Govt. 1950) have never been seen by us and it is doubtful if such large specimens actually occur.

In the lake, *S. serrata* is most common in the southern sector and a narrow strip of central sector adjoining the former which are comparatively more saline, but it is rather scarce in the northern sector where salinity is the lowest and freshwater conditions prevail during some months of the year. Small-sized crabs of this species are available in April and May and the peak fishing season extends from August to November. Crabs are generally caught in the *Noli-jal* which is described elsewhere. The main fishing grounds are Malud, Parikud, Kallikota and Rambha.

Neptunus pelagicus (Linnaeus), (Fig. 3). This is also a salt water species having a wide distribution in the Indo-Pacific region. In the Chilka this comes next in importance to *Scylla serrata* and is caught in the central and southern sectors being rather more in the former. It is also fairly common in the channel area. Young

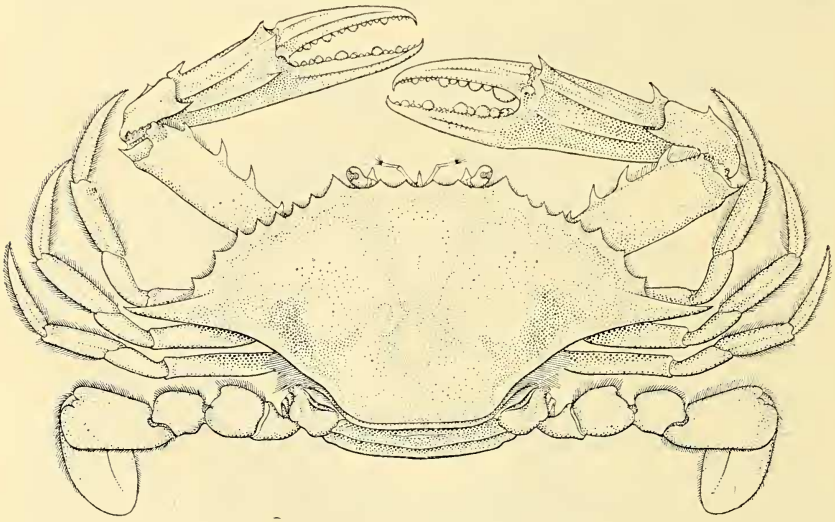

Fig. 3—*Neptunus pelagicus* (Linnaeus).

specimens of this variety are found in the lake by about April. They grow rather quickly and to a fairly large size (4 to 6 inches in carapace width) and provide a regular crop from June/July to January with the peak season extending from August to October. It is caught in drag nets and in traps known as *Konkra-kharia* and its main fishing grounds are Satpara, Noapara and Alupatna.

Fishing Gear and Methods

The gear exclusively used for the purpose of catching crabs in the Chilka Lake consists of a fishing net known as the *Noli-jal* and a box-trap known as *Konkra-kharia* which are described below. In addition to the crabs obtained by the above-mentioned gear, small quantities of them are caught practically throughout the year in shore seines and cast nets. Generally, stray specimens obtained in the off-season are not offered for sale except when caught in appreciable numbers.

Fishing is generally done for four or five days continuously in a week after which the fishermen return to their respective villages. The catches are however sent to the consuming centres almost daily. During the two or three days, which the fishermen have at their disposal, they attend to the repairing and mending of their nets, or traps, applying preservative to nets and settling accounts. On the night of the seventh day they go to the lake once again. This is reported to be the general practice all over the lake and is not peculiar to crab fishing only.

Noli-Jal (Fig. 4).—This net is similar to the *Nandu-valai* described by Prasad and Tampi (1951) for catching *Neptunus pelagicus* near Mandapam, the only difference being that it is made of sunn-hemp. It has no sinkers or bottom weights and is kept stretched between bamboo poles. The floats of the *Noli-jal* are conical, measuring

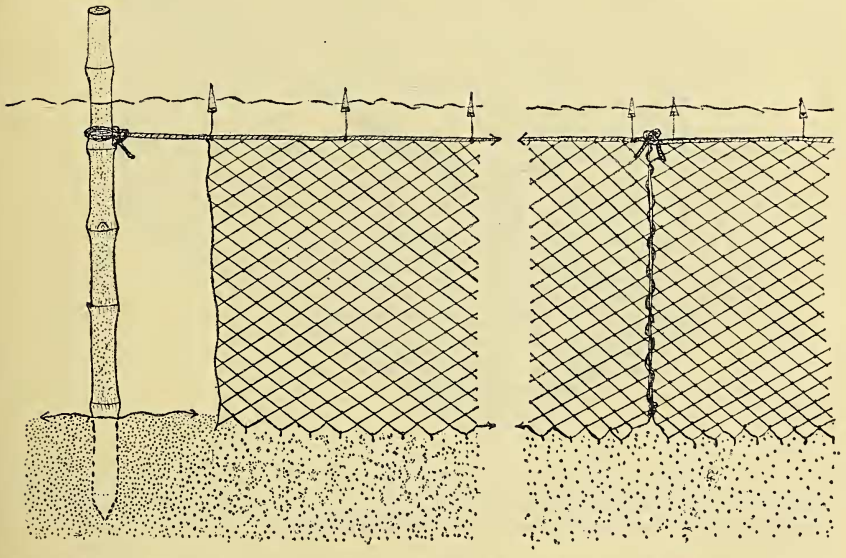

Fig. 4—A section of the *Noli-jal* of the Chilka Lake used for catching *Scylla serrata* (Forskâl)—semi-diagrammatic.

about 4.5″ in length and ¼″ in width at the base. The net is about 240 ft. long, 3.0 to 3.5 ft. deep with meshes measuring 2.75″ from knot to knot. Generally five such pieces are lashed together by passing thick twine through the alternate meshes of the adjoining sides to

make an operational net of about 1,200 ft. in length. For operating it in deeper waters one or more nets are fastened one below the other to make the composite net broader, and longer float lines are used, depending upon the depth. Though the net is operated for the purpose of catching *Scylla serrata*, at times *N. pelagicus* and some large-sized fish also get entangled in its meshes. Crabs are removed either by tapping them with a stick or by breaking their chelipedes. On account of its large mesh the *Noli-jal* is generally used as a gilling net also for catching large-sized fish, by replacing the small conical floats by rectangular ones, each measuring about $8'' \times 3'' \times \frac{1}{4}''$.

Konkra-kharia (Oriya—*Konkra* = crab, *kharia* = trap) (Fig. 5). This is a simple box trap, quadrangular in shape with a single entrance for the crab and is generally operated for *Scylla serrata*.

The trap measures $18'' \times 12'' \times 10''$. It is made of bamboo strips of about $\frac{1}{4}''$ width separated from each other by about $\frac{1}{2}''$ space. One of the sides measuring $12'' \times 10''$ has in it a slit-shaped opening,

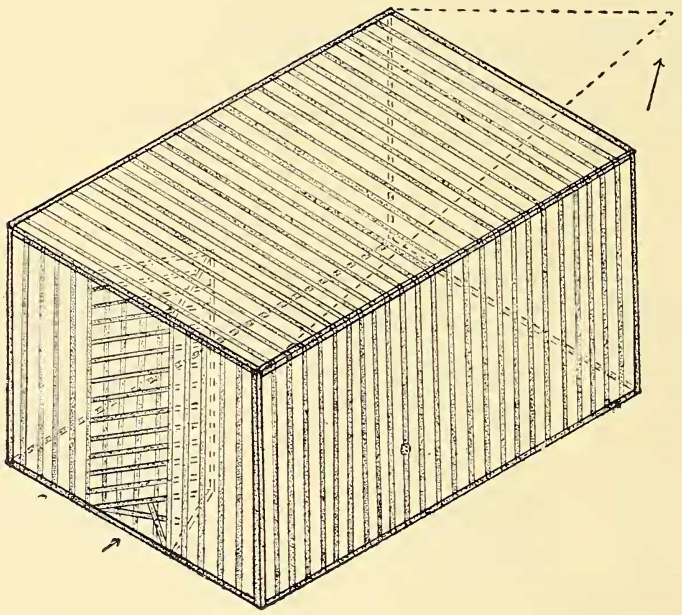

Fig. 5—*Konkra kharia*. The crab trap of the Chilka Lake. The lower arrow indicates the entrance and the dotted line shows the top corner loosened and lifted up for removing the trapped crab—semi-diagrammatic.

measuring about $9'' \times 4''$ and equally spaced from the sides measuring $10''$. This opening is secured by means of a *Chevaux de frise* of bamboo splints which project inside the trap and form a V-shaped wedge. The trap is kept at the bottom of the lake tied to a pole so that it may be easily spotted. A bait consisting of a prawn or small fish is hung inside the trap by means of a thread to attract the crab, which forces its way through the slit with no chance of escape.

The catchers visit the fishing ground at intervals of two hours and collect the traps having crabs inside. One of the ends of the sides measuring 18″ is then loosened and the trap inverted over a basket in which crabs are collected. Not more than one crab is usually collected at a time and the trap is set again with a fresh bait.

Marketing

Crabs are marketed alive, as is generally done on the west coast (Rai 1933), and transported from the fishing grounds to consuming centres in baskets with large quantities of moist weeds above and below, in order to keep them in a moist and cool condition. Marketing is done in different ways by different sects of fishermen. The Koibartas take their catch to Pathra, where it is disposed of through middlemen or merchants known as *Mahajans*. These merchants regularly visit this centre during the season as catches by *Noli-jal* are comparatively high. The *Mahajans* take delivery of catches in Pathra village and pay about Rs. 7 to Rs. 8 per score for the full-grown crabs and about Rs. 4 to Rs. 5 for the medium-sized individuals. They arrange to have the crabs transported to the nearest railway station of Kallikota, which is about three miles away, where sales take place. A large-sized crab usually fetches from 10 to 12 annas and medium-sized from 6 to 8 annas. A high rate is usually paid by the railway passengers who have little time to bargain.

The Tiors of Banpour village as a rule market their catches through relatives or agents who are people of their own caste and who take delivery of the catch at the fish-landing centre at Balugan. Retail sale of crabs is conducted either near the landing place, i.e., near the lake or near the railway station of Balugan or at both the places depending upon the catches. The Kondras of Rambha, like the Tiors, do not entrust disposal of their catches entirely to their relatives or agents, but they also attend to these sales being mostly local. Full-grown and large-sized crabs caught in traps fetch about 6 to 8 annas each and medium-sized about 3 to 6 annas each.

Limited output and presence of local demand leave very little for export. In 1950, however, catches were reported to be more than in the previous two years and nearly 200 maunds were exported by rail, out of which Balugan alone supplied over 100 maunds. Figures of exports from railway records indicate that there was surplus from the end of August to the first week or ten days of October which is the peak season for both the species described. The surplus is generally exported to Khurda road, Puri, Cuttack, Kharagpur and Tatanagar and occasionally to Calcutta, where it fetches almost as much as the stuff sold locally at retail rate, there being a ready market for crabs at all these consuming centres.

On the basis of random observations, the 'local demand' which includes purchases made by railway passengers passing through Chilka stations does not exceed 300 maunds annually. Considering the surplus exported and the quantity consumed round about the fishing centres, the annual output from the lakes does not apparently exceed 500 maunds or roughly 40,000 lbs. value of which is estimated to be about Rs. 15,000.

General Remarks

The crab fishing industry in the Chilka is not extensive as found in other parts of India also (Chopra, 1936). Under the present system of fishing it is not possible to get a correct picture of the availability of crabs in the different sectors of the lake or even to state that the stocks are exploited to the available extent. One thing, however, appears to be almost certain that there is no depletion and this is borne out by the fact that exports in 1950 were much higher than in the previous two years and at the same time there was no slackening of the local demand. Observations indicate that there is great annual fluctuation in the catches, but the causes of these variations are not known.

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